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(54) PRODUCTION OF HIGH STRENGTH STEEL EXCELLENT IN SULFIDE STRESS CRACKING RESISTANCE

(57) Abstract:

PURPOSE: To produce a high strength steel excellent in sulfide stress cracking resistance property by subjecting a steel having a specific composition consisting of C, Si, Mn, P, S, N, Mo, Nb, Ti, Al, B, and Fe to hot rolling and then to respectively specified heat treatment and working.

CONSTITUTION: A steel having a composition which consists of 0.15-0.35% C, 0.05-0.50% Si, 0.20-1.0% Mn, $\leq$0.015% P, $\leq$0.010% S, $\leq$0.008% N, 0.10-0.80% Mo, 0.010-0.050% Nb, $\leq$0.028% Ti, 0.005-0.10% Al, 0.0005-0.0025% B, and the balance essentially Fe and further contains, if necessary, $\leq$1.5% Cr and in which $-0.005 \leq Ti-3.4N \leq 0.01\%$ is satisfied is hot-rolled. Directly after the above or after reheating to a temp. in the austenite region, the steel is worked at 950-700℃ at 15-40% reduction of area. Then, this steel is hardened and successively tempered at 580-720℃. By this method, the high strength steel having high sulfide stress cracking resistance property can be obtained at a low cost.

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